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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,165	06/27/2003	Serge Julien Auguste Imhoff	DN2003076	7815

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THE GOODYEAR TIRE & RUBBER COMPANY
INTELLECTUAL PROPERTY DEPARTMENT 823
1144 EAST MARKET STREET
AKRON, OH 44316-0001

EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/609,165

Applicant(s)

IMHOFF ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>62703,112604</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata (US 5,309,970) and further in view of Hergenrother (EP 0280906), Toyoda (US 4,963,613), and Watanabe (WO 01/14461). Kawabata discloses a runflat tire construction comprising a radial carcass structure 30 and at least one wedge insert 50,60 in each sidewall, wherein said carcass is formed of polyester reinforcing elements (Column 3, Lines 55-65). While Kawabata is silent as to treating the reinforcing elements, it is extremely well known to treat synthetic fiber reinforcing elements, particularly polyester, in order to improve adhesion between said reinforcing elements and the surrounding rubber. In particular, Hergenrother discloses such a method in which a cord, such as polyester, is initially treated with an aqueous emulsion comprising a polyepoxide (water soluble epoxy compound) and subsequently treated with an RFL coating, wherein said RFL coating comprises resorcinol, formaldehyde, and a rubber latex (Page 3, Lines 20-35 and Page 5, Lines 2-4). One of ordinary skill in the art at the time of the invention would have found it obvious to practice the "treatment" method of Hergenrother in the tire of Kawabata to achieve the above noted benefits. As to the rubber latex, Hergenrother teaches that such materials are generally well known and

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suggests that an example is styrene butadiene copolymer latex (Page 5, Lines 8-14).

While the reference fails to expressly state that the rubber latex is formed as a combination of said copolymer and a styrene-butadiene terpolymer, it is extremely well known to form the rubber latex as a combination of these materials, as shown for example by Toyoda (Column 1, Lines 35-38). It is emphasized that Kawabata teaches, "the particular components and amounts thereof are not necessarily critical to the practice of the method of the present invention". Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the rubber latex in accordance to the limitations of the claimed invention.

It is initially noted that applicant contends that the claimed method in which the polyepoxide is applied after the yarns are twisted into a cord distinguishes it from the prior art (in which it is applied prior to twisting) (Page 8, Lines 25+). In this instance, Hergenrother teaches that the first and second coatings can be applied to either the yarns or the cord (Page 5, Line 2).

With respect to the inclusion of a blocked isocyanate, said isocyanate represents an extremely well known and conventionally used additive in RFL coatings, as shown for example by Watanabe (Page 10, Lines 25-27). The reference expressly teaches that such an additive contributes to enhanced adhesive performance. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to include a blocked isocyanate in the RFL coating of Hergenrother. It is emphasized that Hergenrother teaches, "the particular components and amounts thereof are not

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necessarily critical to the practice of the method of the present invention which generally provides that a second coating of this general composition be applied before the yarn becomes embedded in the vulcanizable rubber”.

Regarding claim 2, the carcass of Kawabata is formed of polyester reinforcing elements.

As to claim 3, PEN and PET represent the common and conventionally used forms of polyester in the tire industry.

Regarding claims 6 and 7, Hergenrother teaches that the polyepoxide is included in an amount of 2% by weight (Page 5, Lines 25-26).

As to claims 8 and 9, Watanabe recognizes a wide variety of well known blocked isocyanates (Page 8, Lines 17-24). As to the specific amount of this compound, one of ordinary skill in the art at the time of the invention would have found the broad range of the claimed invention to have been obvious. First, this compound represents an “additive” that is designed to improve adhesion and one of ordinary skill in the art at the time of the invention would have expected such a component to be included in a relatively small amount. Second, as previously noted, Hergenrother teaches, “the particular components and amounts thereof are not necessarily critical to the practice of the method of the present invention which generally provides that a second coating of this general composition be applied before the yarn becomes embedded in the vulcanizable rubber”. Thus, absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include the claimed blocked isocyanates.

With respect to claims 10-13, Hergenrother teaches that the polyepoxide and curative provide a surface coating of from about 0.05 to 3 weight percent (Page 4, Lines 48-50), suggesting that the aqueous emulsion of Hergenrother satisfies the limitations of the claimed invention. Furthermore, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed amounts/weights.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata, Hergenrother, Toyoda, and Watanabe as applied in claim 1 above and further in view of Marshall (US 3,940,544). In describing the polyepoxide, Hergenrother suggests the general use of water-soluble epoxy compounds and more specifically, the exemplary use of triglycidyl glycerol (Page 3, Lines 45-51). While the particular method of forming the above noted polyepoxide is not disclosed, each of the claimed methods is consistent with the well-known and conventionally used methods of forming water-soluble polyepoxide compounds. For example, Marshall evidences one of the claimed methods in which said water-soluble compound is formed by the reaction product of polyhydric alcohol and halohydrin (Column 2, Lines 55-65). It is emphasized that each of the claimed methods is consistent with the conventional manner in which such water-soluble epoxy compounds are formed. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to for the water-soluble epoxy compound of Hergenrother in accordance to the claimed method.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata, Hergenrother, Toyoda, and Watanabe as applied in claim 1 above and

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further in view of Hayashi (US 5,162,437). Regarding the polyepoxide compound (water-soluble epoxy compound), Hergenrother is silent as to the method in which said compound is formed. As noted above, Hergenrother teaches the exemplary use of triglycidyl glycerol (ether) as the water-soluble epoxy compound. It is well recognized that such a compound (polyglycidyl ether) is commonly formed or derived from an ortho-cresol formaldehyde novolac resin, as shown for example by Hayashi (Column 2, Lines 7-10). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the well known and conventional technique of forming a polyepoxide.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script that reads "Justin Fischer".

Justin Fischer

July 26, 2005